TRAINING
OF DOCTORS
ON

TREATMENT OF DIARRHOEAL DISEASES & PROGRAMME MANAGEMENT

NATIONAL DIARRHOEAL DISEASES CONTROL & O.R.T. PROGRAMMES

GOVERNMENT OF INDIA

DIRECTORATE GENERAL OF HEALTH SERVICES,
MINISTRY OF HEALTH AND FAMILY WELFARE,
NEW DELHI

prepared by the

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CALCUTTA

in consultation with the Ministry of Health & Family Welfare and DGHS.
Govt. of India

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TREATMENT OF DIARRHOEAL DISEASES AND PROGRAMME MANAGEMENT

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HOW TO WORK ON THIS MODULE

The purpose of this training course is to help you develop specific skills which are essential for :

(i) appropriate treatment of diarrhoea

(ii) proper training of health workers

(iii) better management of ORT (Diarrhoeal Diseases Control) Programme.

After the training is over you should be able to apply newly acquired knowledge in your own health area.

But this Course differs from other training courses. The materials in this course will not be presented by lecture. Instead, the method of training will be to provide you with necessary basic informations through this booklet followed by exercises for you to work at your own speed. This will help you to actually practise important skills to be learned and to see right away what you are learning. This kind of instructional booklet is called a **MODULE.**

WHAT A COURSE FACILITATOR IS

A course facilitator is a person who will help you learn the skills presented in the modules. He is very familiar with the materials being taught and will answer questions, talk with you about exercises, lead group discussions, and generally provide any help you need to complete the work successfully.

COURSE MATERIALS TO BE USED

There are 2 modules in this course. You will work through one module at a time, in the order shown below. The titles of the modules are :

Treatment of Diarrhoeal Diseases & Programme Management
Nutritional Care During Diarrhoea

HOW YOU SHOULD PROCEED

1. Read carefully the basic informations provided in this module. While reading you may want to underline certain informations you feel important. Use always a pencil which has been provided.

2. This will be followed by exercises based on the new knowledge you have just acquired. These exercises have been designed to practise the skills you have just learnt. Work through them on your own and discuss with your Course Facilitator when you have completed. There are several types of exercises in this module. These are described below :

   a) Short-answer exercise : In a short-answer exercise, write your answers first and then only check the answers given in the next page of the module. But do not consult these answers before writing your own answers.

b) Individual work followd by discussion with course facilitator : In this type of exercise, you will be asked to write an answer to the exercise in the space provided. Then you will talk individually with a course facilitator. The course facilitator will review your answers with you and help resolve any questions you may have. Remember that your discussion with the course facilitator should not interfere with the works of other participants in the room.

Before each exercise of this type, you will see a picture like this:

c) Individual work followed by group discussion :

In this type of exercise, you will first be asked to write an answer to the exercise. Then, when all participants are ready, the course facilitator will lead a small group discussion to review the answers. Always try to think and discuss how the information in the course materials can be used in your health area. Always make yourself available in the room during group discussion.

d) Role-play followed by group discussion :

In this type of exercise, you will be asked to play the role of a person in a situation that may arise in your job. For example, you may be asked to play the role of a supervisor of a health facility in a community meeting, or a nurse in a training session. After the role-play session, the course facilitator will lead a small group discussion about the role-play.

Before each exercise in which there will be a group discussion, you will see a picture like this:

When doing any exercise, always read and follow the instruction carefully.

MANAGEMENT OF DIARRHOEAL DISEASES

INTRODUCTION

WHAT IS DIARRHOEA?

The number of stools normally passed in a day varies with the diet and the person. In diarrhoea, stools contain more water than normal--they are often called loose or watery stools. Diarrhoea is 3 or more loose or watery stools in a day.

Diarrhoea is most common in children, especially those between 6 months and 2 years of age. It is also common in babies under 6 months who are on artificial feeding.

Frequent passing of normal stools is not diarrhoea.

Babies who are breastfed often have stools that are softer than normal; but may not be suffering from diarrhoea.

ACUTE AND CHRONIC DIARRHOEA

Acute diarrhoea starts suddenly and may continue for several days. It is caused by infection of the bowel.

Chronic diarrhoea may vary from day to day and lasts for more than 3 weeks. It can be caused by things such as undernutrition, infection, worms or other parasites in the gut.

WHY IS DIARRHOEA DANGEROUS?

The two main dangers of diarrhoea are death and undernutrition.

Death from acute diarrhoea is usually caused by loss of a large amount of water and salt from the body. This loss is called dehydration.

Diarrhoea is worse and more common in persons with undernutrition. Diarrhoea can cause undernutrition and can make it worse because:

(a) nutrients are lost from the body in diarrhoea,

(b) a person with diarrhoea may not be hungry, and

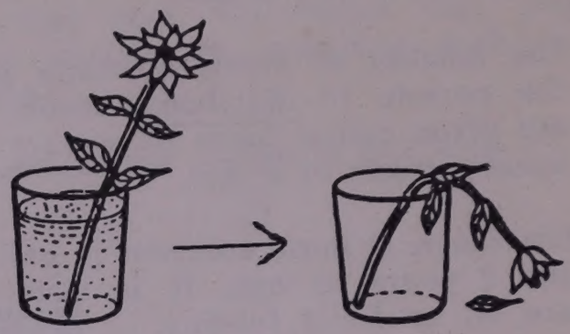
(c) mothers often have a bad habit of withholding or reducing food while their children have diarrhoea, or even for some days after the diarrhoea is cured.

HOW DOES DIARRHOEA CAUSE DEHYDRATION?

The human body requires salt and water for its survival and gets these through drinks and food (input). But in diarrhoea water and salt passes out from the body through loose watery stool (output).

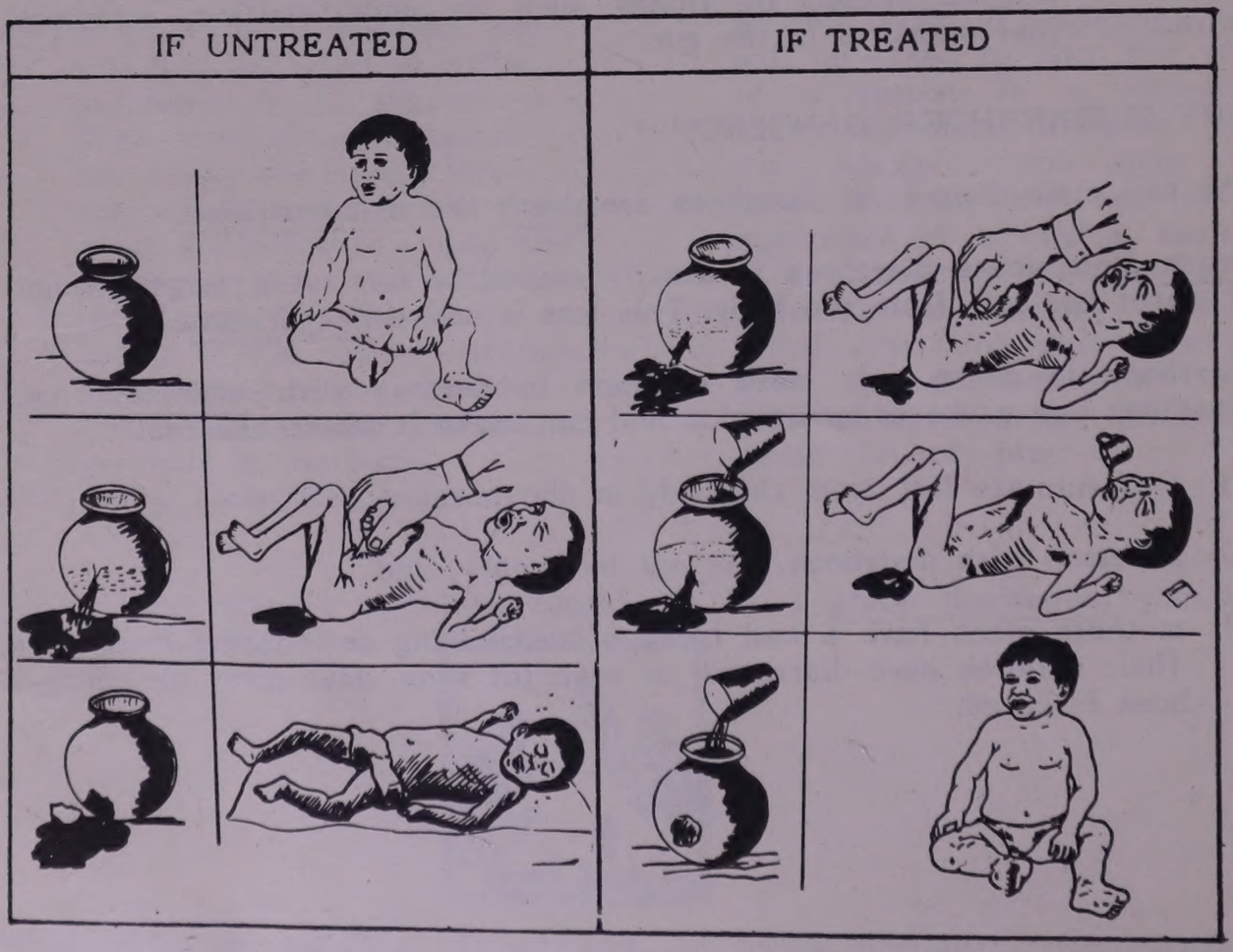
If the output (loss due to diarrhoea) is more than input (drinks given) patient develops dehydration and may finally die as the body is deprived of salt and water.

Such dehydration can also be caused by a lot of vomiting which often accompanies diarrhoea. Dehydration occurs faster in infants and young children, in hot climates and when there is fever.



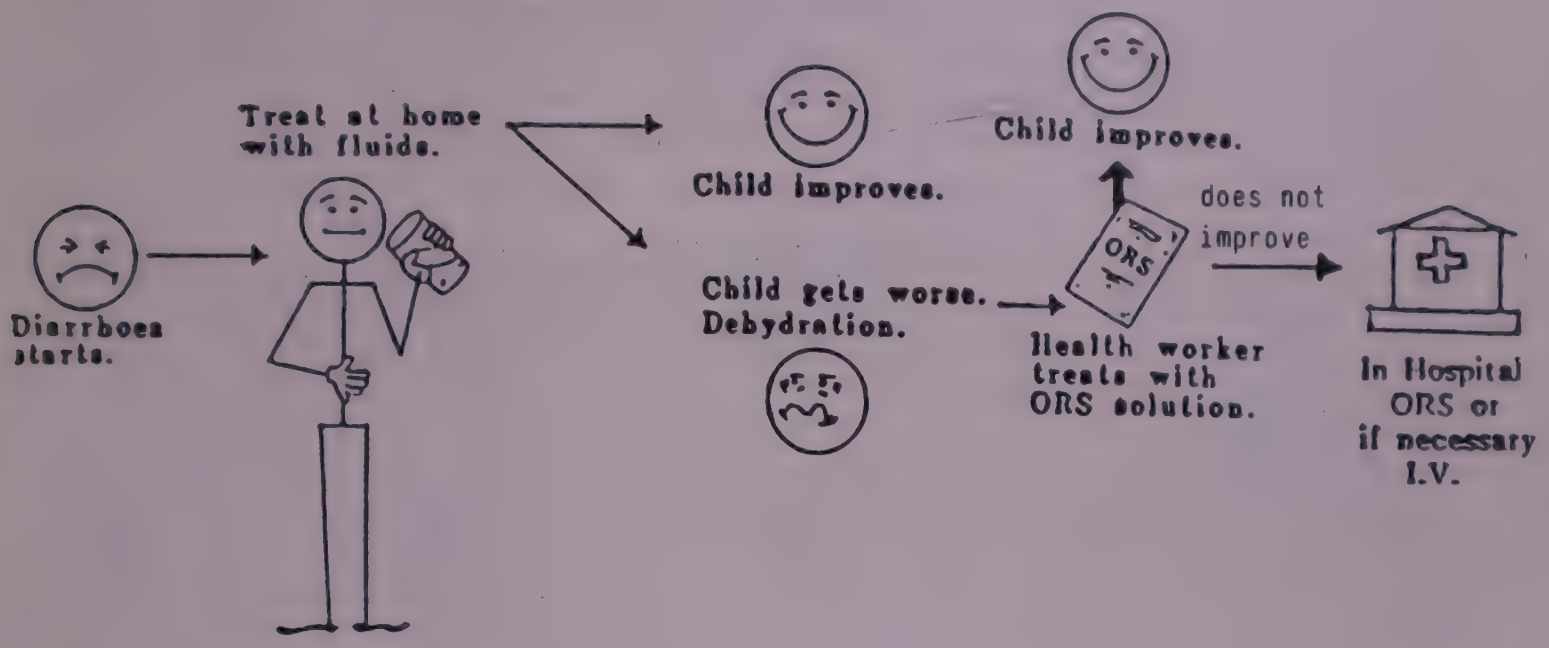
salt and water.

BUT INSPITE OF DIARRHOEA IF INPUT OF SALT AND WATER IS GREATER THAN OUTPUT OR LOSS, DEHYDRATION DOES NOT USUALLY DEVELOP OR EVEN IF DEVELOPS GETS CORRECTED. So in a patient of diarrhoea if dehydration is prevented or corrected patient can not die.



TREATING DIARRHOEA

The most important parts of treatment of diarrhoea are to (1) prevent dehydration from occuring if possible and (2) treat dehydration quickly and well if it does occur.



Prevention of Dehydration: Dehydration can usually be prevented in the home by drinking more fluids as soon as the diarrhoea starts. To do this, give home available fluids, such as rice water, sarbat/sikanji (sugar-lemon-salt solution), lassi, barley water, weak tea, green cocoanut water etc. and increase breastfeeding. The types of fluid or solutions used in your area for preventing dehydration in the home will depend on local availability and acceptability of such fluids.

Treatment of Dehydration: If dehydration occurs (how to recognise dehydration has been discussed on page 6-9), the child should be brought to a local community-based health worker or health centre for treatment. The best treatment for dehydration once it has occurred is oral rehydration therapy using a solution made with oral rehydration salts (ORS). This treatment will be described in this module. Although this module talks mostly about treating children with diarrhoea, the same treatment is also good for adults with diarrhoea. For Treating dehydration, ORS should always be used except in severe dehydration, which will need I.V. fluids initially followed by ORS.

Throughout this module you will have to consider the application of these skills in your own health area.

WHAT THE NATIONAL DIARRHOEAL DISEASES CONTROL PROGRAMME AIMS AT?

Presently the national diarrhoeal disease control programme aims at reducing mortality due to diarrhoea in 0-4 hr. (< 5 yrs.) age group. It has been estimated that about 0.5 - 1 million deaths occur annually in this age group due to diarrhoea alone. The under-five children who comprise around 15% of total population, are more likely to suffer from diarrhoea.

It is found that each child suffers on an average from 2-3 episodes of diarrhoea per year. Roughly 100 million children of our country below five years of age therefore, are likely to suffer from 200-300 million episodes in a year. Prevention of diarrhoea itself, which is not an easy task, remains a long term goal to be achieved. Various aspects of the prevention have been discussed in Annex- 1 (page 66).

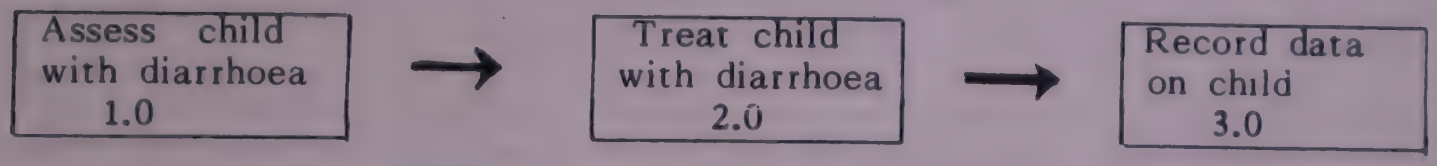
The main STRATEGY of the current programme is prevention and management of dehydration through promotion of oral rehydration therapy. It has been estimated that out of 100 diarrhoeas 10 develop dehydration. So 90 cases of diarrhoea without dehydration can be managed by HOME AVAILABLE FLUIDS (HAF) by mothers only, who have been proposed to be educated by health workers. The cases which are dehydrated will be treated by ORS BY VILLAGE LEVEL HEALTH WORKERS AT COMMUNITY AND DOCTORS AT PHC levels. To ensure FREE VILLAGE BASED TREATMENT BY ORS for cases who develop dehydration following 'HAF' therapy, training of all possible health personnel at village level is being undertaken. Out of 10 cases which are dehydrated one may have severe dehydration requiring I.V. therapy and may have to be referred to PHC/Hospital.

MANAGEMENT OF 100 CASES OF DIARRHOEA IN THE COMMUNITY

LEARNING OBJECTIVES

The informations, examples and exercises in this module should enable you to do the following tasks in your own health area.

1. Perform the following steps whenever a child is brought to you for treatment of diarrhoea



- Assess degree of dehydration by asking 4 symptoms, looking for 5 signs and feeling for 3 signs.

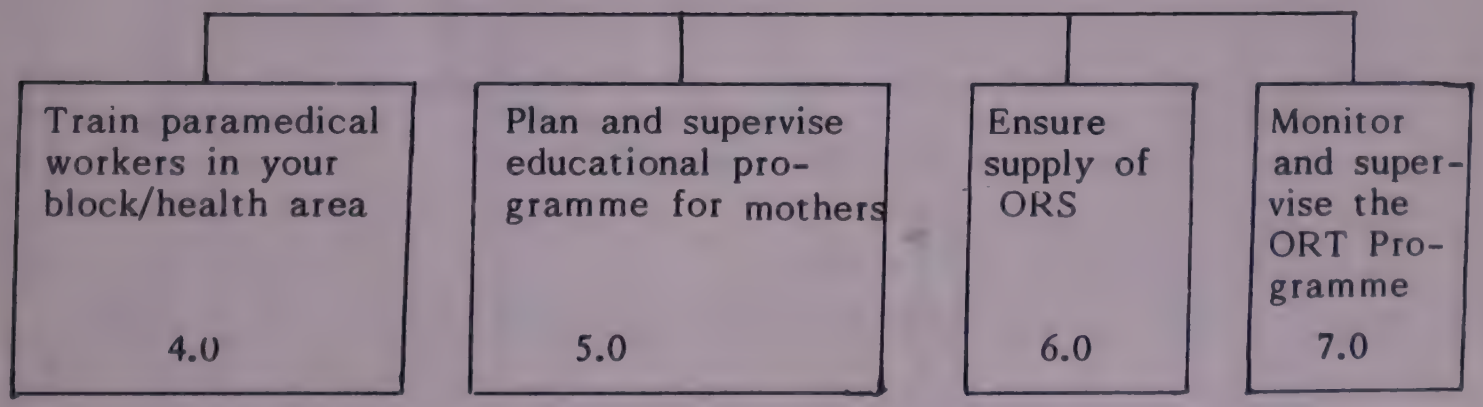
  Look for sign or symptom indicating any other serious problem.

- Select treatment plan to prevent or treat dehydration.

  Treat for any other serious problem.

- Record for individual child's treatment performed at O.P.D. or inpatient department in the specified proforma.

II. Perform the following steps to implement ORT (Oral Rehydration Therapy) programme in your block/health area for all under-five diarrhoea cases.



1.0 ASSESS CHILD WITH DIARRHOEA

Since the most dangerous effect of diarrhoea is dehydration, the first step in treatment of diarrhoea should be to assess the patient for signs of dehydration. The procedure outlined in this step should be followed when you see a child whose mother has stated that diarrhoea is the reason, or one of the reasons, for the child's visit. You should be familiar with all locally used words for diarrhoea or to identify various signs of dehydration. The same procedures should be followed again when you reassess the patient after some treatment has been administered.

NOTE: Mothers will probably expect you to give a treatment that will stop the child's diarrhoea. It may be necessary to explain that oral rehydration treatment is meant to stop or prevent dehydration, and explain why this is more important than stopping the diarrhoea.

1.1 ASK, LOOK, AND FEEL FOR SYMPTOMS AND SIGNS OF DEHYDRATION OR OTHER SERIOUS PROBLEMS

The signs you should ask, look, and feel for are listed below and on the following pages and in the table "HOW to Assess Your Patient" on the following page. Don't read the table now. Read the following list to become familiar with the questions you should ask, the conditions you should feel for, and the things you should look for.

You should:

ASK the following questions:

i) How many liquid stools per day has the child had?
For how long has the child had diarrhoea? Is there blood and mucus in the stool?

ii) Has there been any vomiting?
If so,
- Has there been more than a small amount?
- How frequently has the child vomited?

iii) Is the child able to drink?
If so, is he thirstier than normal?

iv) Has the child passed urine in the last 6 hours?
If so,
- Is it a normal amount or a small amount?
- What is the colour of urine?

Now you can refer to the table to learn how to interpret each of the symptom stated above.

HOW TO ASSESS YOUR PATIENT

		A	B	C	D
1. ASK ABOUT	DIARRHOEA	Less than 4 liquid stools per day	4 to 10 liquid stools per day	More than 10 liquid stools per day	Longer than 3 weeks duration (chronic diarrhoea)
	VOMITING	None or a small amount	Some	Very frequent	Blood or mucus in the stool (dysentery)
	THIRST	Normal	Greater than normal	Unable to drink	
	URINE	Normal	A small amount, dark	No urine for 6 hours	
2. LOOK AT:	CONDITION	Well, alert	Unwell, sleepy or irritable	Very sleepy, unconscious, floppy or having fits	Severe undernutrition
	TEARS	Present	Absent	Absent	
	EYES	Normal	Sunken	Very dry and sunken	
	MOUTH and TONGUE	Wet	Dry	Very dry	
	BREATHING	Normal	Faster than normal	Very fast and deep	
3. FEEL:	SKIN	A pinch goes back quickly	A pinch goes back slowly	A pinch goes back very slowly	
	PULSE	Normal	Faster than normal	Very fast, weak, or you cannot feel it	
	FONTANELLE (in infants)	Normal	Sunken	Very sunken	
4 TAKE TEMPERATURE					High fever - 38.5°C (or 101°F) or greater
5. DECIDE : DEGREE OF DEHYDRATION		The patient has **no** signs of **dehydration**	If the patient has thirst alone or any two or more of other signs, he has **some dehydration**	If the patient has 2 or more of these danger signs, he has **severe dehydration**	If the patient has chronic diarrhoea severe undernutrition, or high fever treat accordingly. If there is blood or mucus in the stool and high fever, suspect dysentery and treat with antimicrobials
6. DECIDE : TREATMENT PLAN		Use Plan A	Use Plan B	Use Plan C	

LOOK for the following conditions:

i) What is the child's general condition?

- Is he well and alert?
- Is he unwell, sleepy, or irritable?
- Is he very sleepy, or unconscious or having fits?
- Is he severely undernourished?

ii) Does the child have tears when he cries?

iii) Are his eyes normal, sunken, or very dry and very sunken?

iv) Is his mouth wet, dry, or very dry?

v) Is his breathing normal, faster than normal, or very fast and deep?

You can refer back to the table on previous page to learn how each of above items have been interpreted.

FEEL for the following:

i) When the skin is pinched, does it go back quickly, slowly, or very slowly (longer than 2 seconds)? In a baby with diarrhoea you should pinch the belly; you may also pinch the back of the neck, or back of the hand. Note: Pinching the skin may give misleading information in severely undernourished or obese patients. In the severely undernourished patient, the skin may go back slowly even if the patient is not dehydrated. In the obese patient, the skin may go back quickly even if the patient is dehydrated.

ii) Can the pulse be felt?
If so, is it normal, faster than normal, very fast, weak or not palpable?

iii) Is the fontanelle (the soft spot on top of the head) -
Normal, sunken, or very sunken?
Note: This is a helpful sign only in children whose fontanelle is not yet closed (usually children under 12 months old).

(Refer back to the table on page 7 for interpretation of the above sign).

TAKE temperature:

i) Does the child have a high fever (Axillary temperature more than $38.5^{o}C$ or $101^{o}F$)?

HOW TO DECIDE ON DEGREES OF DEHYDRATION AND OTHER SERIOUS PROBLEMS?

ASSESS YOUR PATIENT

ASSESS DEGREE OF DEHYDRATION

- ASK 4 SYMPTOMS
- LOOK AT 5 SIGNS
- FEEL FOR 3 SIGNS

LOOK AT TABLE "HOW TO ASSES YOUR PATIENT"

LOOK AT COLUMN C IF 2 OR MORE SIGNS ARE PRESENT —YES→ SEVERE DEHYDRATION

NO

LOOK AT COLUMN B IF THIRST ALONE OR ANY 2 OR MORE SIGNS ARE PRESENT —YES→ SOME DEHYDRATION

NO

LOOK AT COLUMN A → NO DEHYDRATION

ASSESS ANY OTHER SERIOUS PROBLEM

- DIARRHOEA MORE THAN THREE WEEKS?
- BLOOD AND OR MUCUS IN STOOL?
- HIGH TEMPERATURE?
- UNDERNUTRITION?

EXAMPLE: . A mother brought her 3-year-old daughter, Rani, into a clinic because she had diarrhoea. The doctor **asked, looked** and **felt** for signs of dehydration. Here is the table "How to Assess Your Patient" with his findings circled: An enlarged table of the same is also given on the next page.

HOW TO ASSESS YOUR PATIENT

		A	B	C	D
1 ASK ABOUT	DIARRHOEA	Less than 4 liquid stools per day	4 to 10 liquid stools per day	More than 10 liquid stools per day	Longer than 3 weeks duration (chronic diarrhoea)
	VOMITING	None or a small amount	Some	Very frequent	Blood or mucus in the stool (dysentery)
	THIRST	Normal	Greater than normal	Unable to drink	
	URINE	Normal	A small amount, dark	No urine for 6 hours	
2 LOOK AT	CONDITION	Well, alert	Unwell, sleepy or irritable	Very sleepy, unconscious floppy or having fits	Severe undernutrition
	TEARS	Present	Absent	Absent	
	EYES	Normal	Sunken	Very dry and sunken	
	MOUTH and TONGUE	Wet	Dry	Very dry	
	BREATHING	Normal	Faster than normal	Very fast and deep	
3 FEEL	SKIN	A pinch goes back quickly	A pinch goes back slowly	A pinch goes back very slowly	
	PULSE	Normal	Faster than normal	Very fast, weak, or you cannot feel it	
	FONTANELLE (in infants	Normal	Sunken	Very sunken	
4 TAKE TEMPERATURE					High fever - 38.5°C (or 101°F) or greater
5. DECIDE : DEGREE OF DEHYDRATION		The patient has **no** signs of **dehydration**	If the patient has thirst alone or any two or more of other signs, he has some dehydration	If the patient has 2 or more of these danger signs he has **severe dehydration**	If the patient has chronic diarrhoea severe undernutrition or high fever treat accordingly. If there is blood or mucus in the stool and high fever suspect dysentery and treat with antimicrobials
6. DECIDE : TREATMENT PLAN		Use Plan A	Use Plan B	Use Plan C	

Because Rani had blood and mucus in her stool and a high fever (Column D), the doctor suspected dysentery and prescribed Ampicillin. Since Rani had no signs from Column C and 1 sign from Column B, the physician determined that she had **no signs of dehydration.** He thus used Treatment Plan A to prevent Rani from becoming dehydrated.

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HOW TO ASSESS YOUR PATIENT

		A	B	C	D
1. ASK ABOUT:	DIARRHOEA	Less than 4 liquid stools per day	4 to 10 liquid stools per day	More than 10 liquid stools per day	Longer than 3 weeks duration (chronic diarrhoea)
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2. LOOK AT:	CONDITION	Well, alert	Unwell, sleepy or irritable	Very sleepy, unconscious, floppy or having fits	Severe undernutrition
	TEARS	Present	Absent	Absent	
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5. DECIDE : DEGREE OF DEHYDRATION		The patient has **no** signs of **dehydration**	If the patient has thirst alone or any two or more of other signs, he has **some dehydration**	If the patient has 2 or more of these danger signs, he has **severe dehydration**	If the patient has chronic diarrhoea, severe undernutrition or high fever treat accordingly. If there is blood or mucus in the stool and high fever suspect dysentery and treat with antimicrobials.
6. DECIDE : TREATMENT PLAN		Use Plan A	Use Plan B	Use Plan C	

EXERCISE A

In this exercise you will (1) assess the degree of dehydration of a patient, (2) select a treatment plan based on your assessment, and (3) determine if there are any other signs or symptoms which indicate a serious problem.

1. Read the following information:

A mother had come to you at the O.P.D. for treatment of diarrhoea of her 6 months old male child. You ask the mother and learn that the child had 6-7 liquid stools per day. The child had a little amount of vomiting. His thirst is normal. You see that his mouth and tongue are wet. You pinch the skin of his abdomen and it goes back quickly. His pulse is normal.

2. On the table given on facing page circle each symptom, or sign you have found in the child. We have started this for you by circling the first item

After you have finished circling, answer the following questions:

i) What is the degree of dehydration shown by the child? (Put tick ✓)

( ) no sign of dehydration; ( ) some dehydration;

( ) severe dehydration

ii) Which treatment plan would you select for this child? (Put tick ✓)

Treatment Plan [A] [B] [C]

WHEN YOU HAVE FINISHED THIS EXERCISE TALK WITH THE COURSE FACILITATOR

HOW TO ASSESS YOUR PATIENT

		A	B	C	D
ASK ABOUT:	DIARRHOEA	Less than 4 liquid stools per day	4 to 10 liquid stools per day	More than 10 liquid stools per day	Longer than 3 weeks duration (chronic diarrhoea)
	VOMITING	None or a small amount	Some	Very frequent	Blood or mucus in the stool (dysentery)
	THIRST	Normal	Greater than normal	Unable to drink	
	URINE	Normal	A small amount, dark	No urine for 6 hours	
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	TEARS	Present	Absent	Absent	
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	BREATHING	Normal	Faster than normal	Very fast and deep	
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TAKE TEMPERATURE					High fever - 38.5°C (or 101°F) or greater
DECIDE : DEGREE OF DEHYDRATION		The patient has **no signs** of **dehydration**	If the patient has thirst alone or any two or more of other signs, he has **some dehydration**	If the patient has 2 or more of these danger signs, he has **severe dehydration**	If the patient has chronic diarrhoea, severe undernutrition or high fever treat accordingly. If there is blood or mucus in the sto and high fever, suspect dysentery an treat with antimicrobials
DECIDE : TREATMENT PLAN		Use Plan A	Use Plan B	Use Plan C	

EXERCISE B

In this exercise you will recapitulate the 4 questions you should ask, 5 signs you should look for and 3 signs you should feel to assess dehydration of diarrhoeal patient.

Secondly, you will interpret individual symptoms or signs for degree of dehydration from case history of a child.

Finally you will assess the degree of dehydration of that child.

Look at the table given below. There are six columns in it viz. Col. No. I & II; A, B, C, & D
For the first part of the exercise you try to fill up Col. No. I ONLY
In this column you write down 4 items you should ask about, 5 items you should look at and 3 signs you should feel in a case of diarrhoea. In Col. I against 'Others' you should enlist the serious problems (other than dehydration) one would try to identify in a case of diarrhoea.

(This part is nothing but recapitulation. So check yourself how many blanks you can fill up! IN CASE YOU HAVE MISSED ANY, FEEL FREE TO CONSULT

	Col. No. I	Col. No. II	A	B	C	D
1. ASK ABOUT						
2. LOOK AT						
3. FEEL FOR						
4. OTHERS						

DON'T LEAVE ANY SPACE BLANK IN COL. NO. I BEFORE YOU PROCEED.

Since that you could write up all the items in Col. I, we assume you asked, felt and looked at the items for a diarrhoea child whose case history is given below:

Read out the following case history and enter the observations in Col. No. II of the table on the facing page against respective item.

Case history: The 18 months old child Panu is having diarrhoea since last 3 days. You ask the mother and learn that Panu has been drinking a lot of water but is passing very little urine. He has vomited 2 times and has had 11 watery stools today. You look that Panu's eyes are somewhat sunken, his mouth and tongue are dry and his breathing is normal. When you pinch the skin in his abdomen the skin goes back slowly. His pulse feels faster but strong. His temperature is 39^{O}C. Panu is fussy and irritable and cries during examination. There are tears when he cries.

BEFORE YOU PROCEED FURTHER ENSURE THAT YOU HAVE ENTERED ALL THE OBSERVATIONS IN COL.NO. II.

Based on your entry on Col. I & Col. II, you will find some symptoms/signs belonged to the category A (no dehydration), some in category B (some dehydration) and some in category C (severe dehydration) in the table 'how to asses your patient'.

Can you interpret each item separately putting a tick mark against each of them under Col 'A', 'B' & 'C' to signify degree of dehydration or any other serious problem they indicate in column 'D'.

Finally look, at the whole table you have filled up. Now you get a total picture of status of dehydration of Panu. So, please answer:

What is the degree of dehydration shown by Panu (Check one)

( ) no dehydration, ( ) some dehydration, ( ) severe dehydration

Which treatment plan do you select for Panu for dehydration if any?

Are there any other serious problem shown by Panu that require treatment?

If yes, how would you treat those problem?

EXERCISE C

In this exercise you will see several pictures of children on the following pages. You should look at these pictures and ask the course facilitator any questions which you may have about identifying the visible signs of dehydration or the signs or symptoms that may indicate a serious problem.

As you look at the pictures, you may wish to write notes in the space provided below

A group discussion will follow.

AGE: 2 1/2 YEARS

1

(3 seconds between pictures)

AGE: 18 MONTHS

2

AGE: 3 MONTHS

3

2.0 TREAT A CHILD WITH DIARRHOEA

Once the assessment of degree of dehydration is performed, the appropriate treatment has to be selected.

For no signs of dehydration, select treatment plan A - to prevent dehydration by advising 'Home Available Fluids'

For some dehydration, select treatment plan B - to treat dehydration with ORS solution

For severe dehydration, select treatment plan C - to treat severe dehydration quickly by I.V. and/or ORS solution.

You may also need to treat any other serious problem that have been identified.

TREATMENT OF A CHILD WITH NO SIGNS OF DEHYDRATION:

Treatment Plan A aims at preventing dehydration in early diarrhoea.

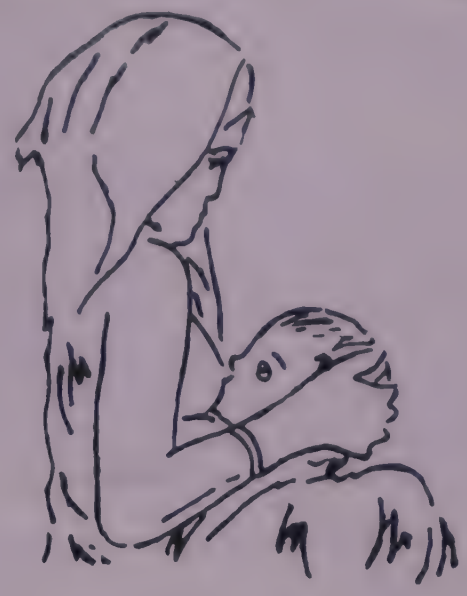
If children are treated by plenty of fluids from very beginning of watery diarrhoea, dehydration can be prevented in most cases. Fluids available at home and which are traditionally acceptable are best suited for such purpose. Traditional fluids vary from place to place. Any such fluid which contain salt and sugar (in any form - glucose, sucrose or starch) should be promoted. Examples of such fluids have been given later. Preferably those fluids should have an appeal as therapy and must be tasteful. Your advice should emphasise on type of fluid to be given - its amount and frequency apart from other advice (e.g. food to be given).

Mothers or other family members when advised properly can manage most of the diarrhoeal children at home, provided those cases don't have any dehydration.

For easy understanding of mother treatment plan 'A' has been described as '3 rules for home treatment of diarrhoea' which every mother should remember. The above description will help you to advise mother whenever required. Plan 'A' has again been described on page 24.

3 RULES FOR HOME TREATMENT OF DIARRHOEA

1. Give the child more fluids than usual.



i) If the child is breastfed, try to give breast milk more often. If the child is not breastfed, increase the amount of normal milk feed but dilute the feed with an equal volume of water.

ii) Give the child

- home available fluid or liquids, such as rice water, sarbat/sikanji, lassi etc.

Children under 2 years old should receive approximately 50-100 ml ($\frac{1}{4}$ - $\frac{1}{2}$ cup)* of fluid after each loose stool, and older children should receive twice this amount. Adults should take as much as they want to drink.

*(It is assumed that one cup measures 200 ml).

2. Continue feeding the child

Starving a child who has diarrhoea can cause undernutrition or make it worse.

All children 4 months old or older who have been weaned, should be offered solid food during diarrhoea. The best foods to give are those which are easily digested (such as boiled rice, pulses, beans, sweet potato, green papaya and eggs, fish, well cooked meat) and those containing potassium (such as pineapple, bananas, and cocoanut water). Some fat or oil may also be given. Fibrous and spicy food should be avoided.

Even during the process of diarrhoea, most of the nutrients from food continues to be absorbed.

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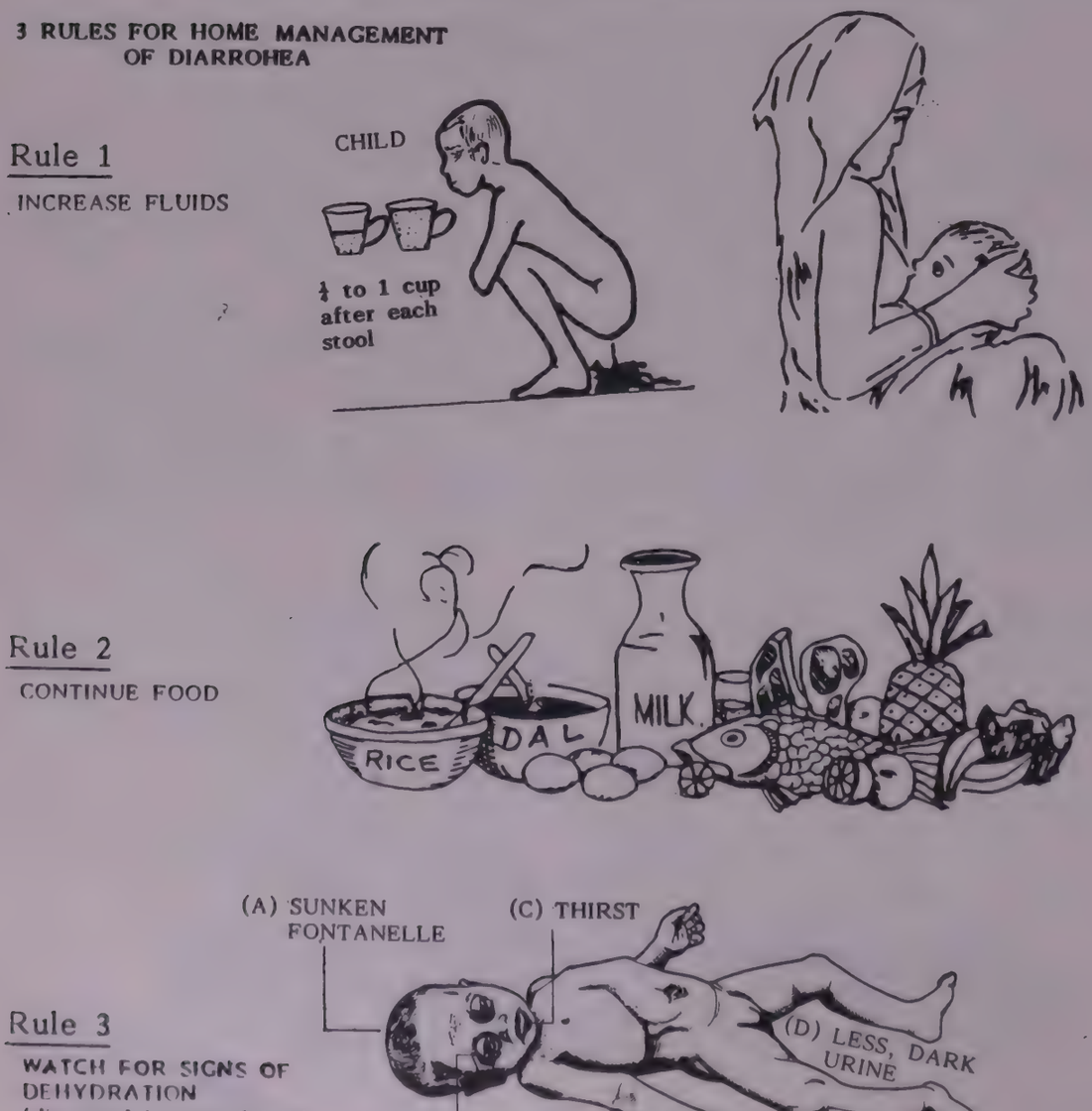
A child should be allowed to eat as much as he wants. Food should be offered often (5-7 times a day) during diarrhoea, because the child is not likely to eat much at each time. The child should have at least one extra feed a day for a week after the diarrhoea has stopped.

3. Watch for signs of dehydration

Symptoms and signs of dehydration have already been discussed in pages 6-9 of this module. If a child develops any sign of dehydration or if his diarrhoea lasts another 2 days, the mother should take the child to the health centre or community health worker. However the points a mother should remember to identify dehydration are i) thirst, ii) dark and scanty urine, iii) sunken eyes and fontanelle and iv) dry mouth and tongue.

3 RULES
for
Early Home Management of Diarrhoea

1. INCREASE fluids
2. CONTINUE food
3. WATCH for signs of dehydration



EXERCISE D

In this exercise you will have a group discussion about what mothers in your community are currently doing to treat diarrhoea in the home and, if their methods of treatment could be improved, how to bring about these improvements.

Issues you should prepare to discuss include:

(1) What treatment practices for diarrhoea are currently followed by mothers in your health area?

(2) Can you identify those current practices which are harmful and helpful?

harmful helpful

(3) What specific fluids will be recommended for treating diarrhoea at home in your health area and why? Can they be improved?

(4) How frequently fluid should be given and by what amount (particularly by cup or any local measure)?

(5) What foods are offered to the child during diarrhoea? What specific foods will be recommended in diarrhoea in your area and why?

TELL THE COURSE FACILITATOR WHEN YOU ARE READY FOR THE GROUP DISCUSSION.

TREATMENT PLAN A
TO PREVENT DEHYDRATION

EXPLAIN TO THE MOTHER HOW TO TREAT DIARRHOEA AT HOME FOLLOWING THREE RULES :

1. GIVE YOUR CHILD MORE FLUIDS THAN USUAL, such as:

   - rice water, sarbat/sikanji, barley water, lassi, weak tea,

   AND

   - breast milk, or milk feeds mixed with twice the usual amount of water

   AFTER EACH LOOSE STOOL, MOTHER SHOULD GIVE:

   - ¼-½ cup* (50-100 ml) of FLUIDS for a child less than 2 years old
   - ½-1 cup (100-200 ml) for older children. Adults can take as much as they want

If the child vomits, tell her to wait 10 minutes and then continue slowly giving small amounts.

2. GIVE YOUR CHILD FOOD:

   - as much as he wants
   - 5 to 7 times a day
   - which is easy to digest
   - which contains potassium

3. WATCH FOR SIGNS OF DEHYDRATION. (you must show the mother how to ASK, LOOK AND FEEL for the signs (mentioned on page 8). Then ask her to show you).

   BRING YOUR CHILD BACK, IF:

   - you see signs of dehydration **OR**
   - your child has diarrhoea for another two days

TELL THE MOTHER THESE RULES ARE IMPORTANT.
EXPLAIN THAT SHE CAN PREVENT DIARRHOEA, IF:

- she gives her child fresh, clean and well-cooked food and clean drinking water
- she practices washing hands with soap after passing stools and before preparing food or feeding the child. Similarly hands of older children should also be washed

*MEASUREMENT OF A CUP SHOULD BE STANDARDISED FOR EACH LOCAL AREA

SHORT-ANSWER EXERCISE

As you do this exercise, you can also refer to Annex - 1 of the module (Prevention of Diarrhoea page 66).

A mother has brought her 11-month-old child to a Community Health Worker because the child has diarrhoea. The mother is breast feeding the child. The health worker asks, looks and feels for signs of dehydration and finds that the child has none. He decides to begin treatment using Treatment Plan A.

Describe what the health worker would do and what he would tell the mother.

Answer:

One's answer should cover these points in one's own words. It may be less detailed than this.

The health worker would first compliment the mother for bringing her child before he got very sick.

He would tell the mother to increase the amount of fluids offered to the child. This would include increasing the frequency of breast feeds and giving other locally available fluids, such as rice-water etc. He would explain that giving rice-water and other fluids is a good practice when children get diarrhoea.

He would explain that the mother should feed the child often (5-7 times a day) with foods that are easily digested and which contain potassium (and would give examples of these foods that the mother would know).
(IF YOU LIKE YOU CAN AGAIN REVISE FROM PAGES 20-22).
He would explain to the mother how to watch for and recognize signs of dehydration and make sure she understands. Note: Some health workers tell mothers only the more obvious signs of dehydration (so they will not have so much to remember). These are:

i) greater than normal thirst (earliest symptom to appear),
ii) dark urine,
iii) unwell, sleepy or irritable condition,
iv) sunken eyes,
v) sunken soft spot on the top of the head,

(FOR REVISION YOU CAN CONSULT PAGE 6-9).

He would tell the mother to come quickly to the health centre or to a village based health worker if signs of dehydration appear or if the diarrhoea lasts another 2 days.

He would explain to the mother how diarrhoea can be prevented by giving the child fresh, clean and well-cooked food and clean drinking water, and by practising good hygiene (Annex 1).

TREATMENT OF A CHILD WITH SOME DEHYDRATION:

Treatment Plan 'B' is for treatment of child with some dehydration.

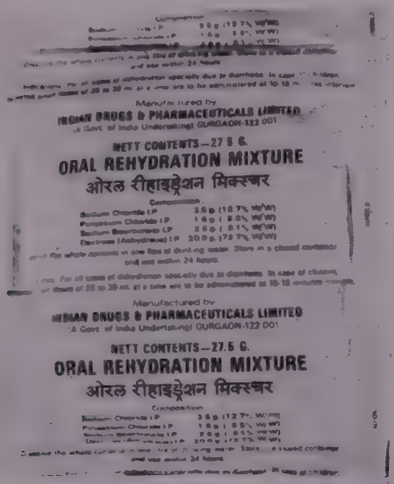
When a child develops signs of some dehydration with or without early home management treatment plan B i.e. treatment by ORS, **must** be introduced.

Remember that no attempt should be made to manage dehydrated cases by any home made formula or any oral fluid other than ORS of WHO formula. That is why all mothers who are advised for early home management for diarrhoea must be told to report to you or any village based health worker whenever any early sign/symptom of dehydration appears.

TREATMENT BY ORS:

Treatment of children with signs of some dehydration will involve using a solution made with oral rehydration salts (ORS). However, severe cases of dehydration require I.V. therapy which has been described later.

INGREDIENTS OF ORS PACKET (W.H.O. Formula)



INGREDIENTS	AMOUNT
Glucose (a form of sugar)	20.0 gms
Sodium chloride (ordinary salt)	3.5 gms
Sodium Bicarbonate* (Baking soda)	2.5 gms
Potassium chloride	1.5 gms

A FEW WORDS ABOUT STORAGE AND SUPPLY OF ORS

Ensure that ORS packets are adequately stored

Some guidelines for storing ORS are given below:

i) Excessive atmospheric temperature and humidity might spoil the ORS, if stored under such conditions for a longer time.

ii) Storage areas should be clear of all types of insects, rats and mice. Racks away from walls and floors should be preferred.

iii) Packets should be arranged so that sharp objects will not make holes in the packets.

iv) Packets of ORS should be arranged so that identification marks and other labels can be easily seen. Thus the oldest ORS packet (identified by date) may be used first.

v) If the storage facilities are not good it may be necessary to stock fewer packets at a time, to be replenished at regular intervals.

Can this demand of ORS at SC level be calculated to facilitate regular supply? (see next page for the answer).

---

*Trisodium citrate dihydrate - 2.9 grams, can also be used as an alternative to Sodium Bicarbonate.

ORS requirement:

Based on data given on page 4 a rough estimate of ORS requirement for under-five children under Village Health Worker covering a population of 1000 in one village is given below:

i) There will be approximately 150 children (under five children = 15% of the total population i.e. 1000).

ii) 150 children will possibly suffer from 300-450 diarrhoeal episodes in one year (2-3 episodes/child/year.)

iii) If 10% of all such diarrhoea develop dehydration 30-45 episodes of diarrhoea will require ORS therapy, at the rate of 2 packets/episode.

iv) 30% extra (for wastage, older diarrhoea patients, epidemics etc.)

How many of these cases can be treated by HAF? (see page 4)

How many of those cases will have to be referred to PHC? (see page 4)

HOW TO PREPARE ORAL REHYDRATION SOLUTION

Packets that contain the ingredients as stated on page 28 are made for mixing in one litre of drinking water. This mixture is called ORS SOLUTION. Preparation of ORS solution is a skill that all health workers should have. They must always try to supply ORS solution as mothers can commit serious mistakes in preparing the solution.

To prepare ORS solution, perform the following steps:

i) Wash your hands

ii) Measure 1 litre of clean drinking water using the measuring container supplied.

iii) Pour all the powder from one packet into the water and mix well until powder is completely dissolved.

Fresh ORS solution should be mixed each day in a clean container. The container should be kept covered. Any solution remaining from the day before should be thrown away.

TREATMENT PLAN B

TO TREAT DEHYDRATION WITH ORS SOLUTION

1. HOW MUCH ORS SOLUTION TO GIVE DURING FIRST 4-6 HOURS:

   a) For a child aged upto 6 months -
   200-400 ml or 1-2 cups (2-5 teaspoonfuls every 15 minutes approx.)
   b) For a child aged between 7-12 months -
   400-600 ml or 2-3 cups (4-7 teaspoonfuls every 15 minutes approx.)
   c) For a child aged between 1-5 years -
   600-800 ml or 3-4 cups (6-8 teaspoonfuls every 15 minutes approx.)
   d) For older children and adults -
   1-4 litres or 5-20 cups (10 teaspoonfuls to 1 cup every 15 mins. approx.)

If the patient wants more ORS solution, give more. If the eyelids become puffy, stop ORS and continue to give plain water and other fluids (without salt). Use ORS solution again when puffiness is gone and dehydration recurs.

2. IF THE MOTHER CAN REMAIN AT THE HEALTH CENTRE:

   i) tell her how much ORS solution to give her child
   ii) show her how to give it
   iii) watch her give it

3. AFTER 4-6 HOURS REASSESS THE CHILD. THEN CHOOSE THE SUITABLE TREATMENT PLAN.

NOTE I. FOR CHILDREN UNDER 12 MONTHS CONTINUING TREATMENT PLAN B AFTER 4-6 HOURS, TELL THE MOTHER TO GIVE:

   i) breast milk feeds between drinks of the ORS solution, or
   ii) 100-200 ml of clean water before continuing ORS if she does not breastfeed her child

NOTE II. IF A CHILD BEGINS TO VOMIT WHILE BEING GIVEN ORS SOLUTION, WAIT 10 MINUTES - THEN CONTINUE TO GIVE ORS SLOWLY AND IN SMALL AMOUNTS (some children may want to drink too quickly, which make them vomit).

4. IF THE MOTHER GETTING HER CHILD TREATED AT O.P.D./S.C. MUST LEAVE ANY TIME BEFORE COMPLETING TREATMENT PLAN B

Give her enough of prepared ORS solution for 24 hours, and if the child still has dehydration she should bring the child again.

Explain briefly how to prevent diarrhoea.

DO NOT FORGET TO DISCUSS THE MEASUREMENT OF A STANDARD CUP OR VESSEL IN YOUR LOCAL AREA

SHORT-ANSWER EXERCISE

1. A child with diarrhoea has some signs of dehydration. The child is 8 months old. How much ORS solution should be given to him during the first 4-6 hours?

2. A mother has brought her 2½-year-old daughter to the health centre. The child was assessed and found to have signs of some dehydration. While at the centre, the mother gave her 700 ml (3½ cup) of ORS solution within 4 hours. After 4 hours, the child was reassessed and it was determined that she still had some of the signs of dehydration but she was improving. Assuming that the mother can stay at the facility, what should be done next?

[Assume one cup contains 200 ml of fluid]

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Answer:

1. 2-3 cups (400-600 ml) of ORS solution should be given in a period of 4-6 hours.

2. Give the child an additional 3-4 cups (600-800 ml) of ORS solution during the next 4-6 hours.

DON'T FORGET TO STANDARDISE CUP FOR YOUR LOCAL AREA. DISCUSS WITH COURSE FACILITATOR.

EXERCISE E

In this exercise one participant will prepare ORS solution.

1. The course facilitator will provide an ORS packet, clean drinking water, a container, measuring glass and scissors.

2. One participant will prepare the ORS solution in front of the course facilitator and other participants. As he prepares the solution, he should describe each steps. All participants will then taste the ORS solution to become familiar with its taste when it is made correctly.

   A group discussion will follow.

TREATMENT OF A CHILD WITH SEVERE DEHYDRATION:

Treatment plan C deals with treatment of severe dehydration. Community based health staff should be advised not to attempt I.V. treatment in these cases. They should, however, start immediate treatment with ORS as per Treatment Plan B and at once refer the case to the nearby facility for I.V. treatment.

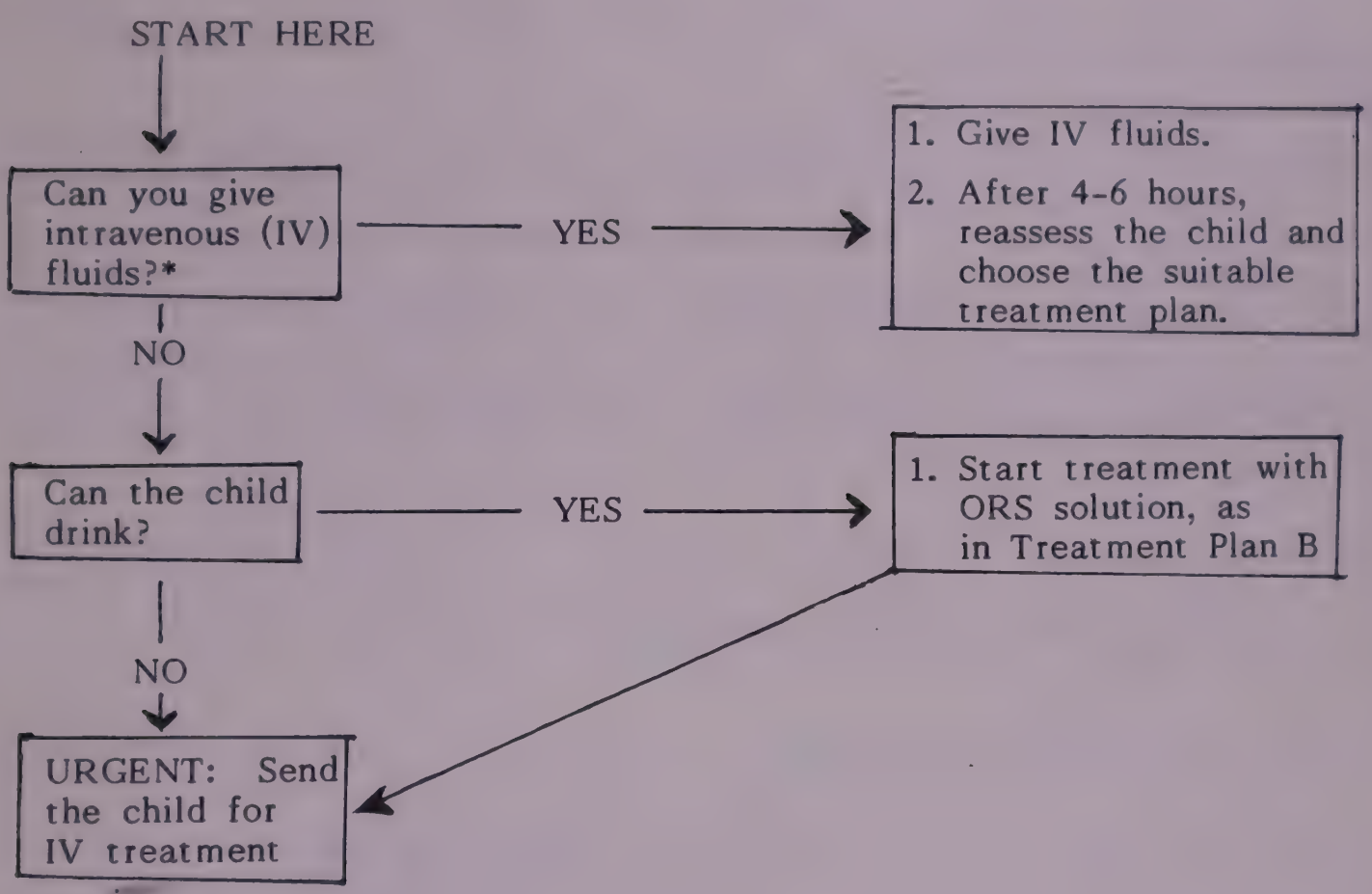
Read "Treatment Plan C", describing treatment for severe dehydration on following page.

Read "Intravenous Therapy for Severe Dehydration". Then do the short-answer exercise given.

TREATMENT PLAN C

TO TREAT SEVERE DEHYDRATION QUICKLY

Follow the arrows. If the answer to the questions is **'yes'**, go across. If it is **'no'** go down.


START HERE
Can you give intravenous (IV) fluids?*
YES
1. Give IV fluids.
2. After 4-6 hours, reassess the child and choose the suitable treatment plan.
NO
Can the child drink?
YES
1. Start treatment with ORS solution, as in Treatment Plan B
NO
URGENT: Send the child for IV treatment

NOTE: If there is a high fever, show the mother how to cool the child with a wet cloth and fanning.

*Only a doctor or a trained hospital staff should give IV fluids.

INTRAVENOUS THERAPY FOR SEVERE DEHYDRATION

1. Technique of administration

The technique of administration of intravenous fluids can only be taught by practical demonstration by someone with experience. Intravenous therapy should be given only by trained persons. Several general points are made here.

The needles, tubing, bottles, and fluid used for intravenous therapy must be sterile.

Intravenous therapy can be given into any convenient vein. The most accessible veins are generally those in front of the elbow, on the back of the hand, at the ankle, or, in infants, on the side of the scalp. Use of neck veins or incision to locate a vein are usually not necessary and should be avoided if possible. In cases requiring rapid resuscitation, a needle may be introduced into the femoral vein where it must be held firmly in place and removed as soon as possible. In some cases of severe dehydration, particularly in adults, infusion into two veins may be necessary; one infusion can be removed once rehydration is well in progress.

It is useful to mark intravenous fluid bottles at various levels with the times at which the fluid should have fallen to those levels. This allows easier monitoring of the rate of administration.

2. Solutions for intravenous infusion

A number of solutions are available for IV infusion; however, some do not contain appropriate or adequate amounts of the electrolytes required to correct the deficits found in dehydration associated with acute diarrhoea. The following is a brief discussion of the relative suitablity of each of these solutions.

Preferred solution

Ringer's Lactate Solution (also called Hartmann's Solution for injection) is the best commercially available solution. It supplies adequate concentration of sodium and potassium, and the lactate yields bicarbonate for correction of the acidosis. It can be used in all age groups for dehydration due to acute diarrhoea of all causes.

Less suitable solutions

(If they are used, they should be replaced or accompanied by ORS solution given by mouth as soon as the patient can drink).

Half-strength Darrow's Solution (also called Lactated Potassic Saline). This solution does not contain enough sodium chloride to correct the sodium deficit and ongoing sodium losses in adults with severe dehydration and continuing severe diarrhoea.

- Normal Saline (also called isotonic or Physiological Saline): This solution is often readily available. It will not correct the acidosis and will not replace potassium losses. If used, this solution should be accompanied by ORS by mouth.

- Half Normal Saline in 5% Dextrose : Like Normal Saline, this solution will not correct acidosis nor replace potassium losses. It also will not provide enough sodium chloride for many adults with acute diarrhoea.

Unsuitable solutions

- Plain Glucose and Dextrose Solutions should not be used as they provide only water and sugar. They do not contain electrolytes and thus they do not correct the electrolyte losses or the acidosis.

3. Providing IV Therapy for Severe Dehydration

The purpose is to give the patient a large quantity of fluids quickly to replace the very large fluid loss which has resulted in severe dehydration.

i) Begin intravenous therapy quickly in the amount specified on the table given below:

GUIDELINES FOR REHYDRATION THERAPY FOR SEVERE DEHYDRATION*

Age Group	Type of Fluid	Amount of Fluid (per kg body wt.)	Time of Administration
Infants (under 12 months)	IV Ringer's Lactate	30 ml/kg	Within 1 hour
	FOLLOWED BY		
	IV Ringer's Lactate	40 ml/kg	Within next 2 hours
	FOLLOWED BY		
	ORS Solution	40 ml/kg	Within next 3 hours
Other children and adults	IV Ringer's Lactate	100 ml/kg	Within 4 hours; initially as fast as possible until radial pulse is easily felt

*The volumes of fluid and rates of administering treatment are averages based on usual needs. These amounts should be increased if they are not adequate to achieve rehydration, or decreased if hydration is achieved earlier than expected or if the appearance of puffiness around the eyes suggests overhydration. Once the health worker has gained some experience in rehydration therapy he may not need to follow this exact schedule.

- For an infant, the entire 6 hour course of therapy should be followed to quickly restore the fluid loss of the severely dehydrated patient. During that 6-hour period, the progress of the rehydration therapy should be assessed after one hour and then every 1-2 hours to determine if the volume or rate of administration needs to be increased. In particular, attention should be given to:

  - the number and volume of stools passed
  - the extent of vomiting
  - the presence of, and changes in, the signs of dehydration
  - whether the rehydration fluid (oral or I.V.) is being successfully given and in adequate amounts.

  If the signs of dehydration and the diarrhoea and vomiting have become worse or remain unchanged, the rate of administration and the amount of fluid given may need to be increased.

- While rehydration therapy (to replace the body's abnormal losses) is in progress, the patient's normal daily fluid requirements must also be considered. After 6 hours, begin breastfeeding, or for the non-breastfed infant, give 100-200 ml of clean water before continuing OR therapy. (For older children and adults, plain water should be available to patients to drink as they wish, in addition to ORS solution).

- After the first 6 hours (4 hours for older children and adults), ASK, LOOK, and FEEL for the signs of dehydration. AT this point, complete or near complete rehydration of the severely dehydrated patient should have been achieved. The patient will require continued therapy to prevent dehydration from returning as long as the diarrhoea continues.

  - If there are no signs of dehydration, use Plan A - Prevent Dehydration.

  - If some of the signs of dehydration are still present but the child is improving, give ORS for another 6 hours in the amount specified in the table in Treatment Plan B.

  - If the signs of dehydration are worse or remain unchanged, rehydration therapy must be continued.

SHORT-ANSWER EXERCISE

1. A 4-month-old baby weighing 5 kg. has received 350 ml of IV fluid in 3 hours and is improving. She can now drink. Complete the following sentence to show the correct treatment.

Give_____cup (_____ml) of_____within the next_____hour(s).

2. A 3-month-old boy weighing 4 kg. has been treated for severe dehydration for 6 hours, first with IV for 3 hours and then with ORS solution for 3 hours. The child has just been reassessed. He is improving but still has some signs of dehydration. Complete the following sentence to show the correct treatment.

Give_____cup (_____ml) of _____within the next_____hour(s).

Answer:

1. Give one cup (200 ml) of ORS solution within the next 3 hours.

2. Give 1-2 cups (200-400 ml) of ORS solution within the next 4-6 hours (amount of ORS solution is based on the table in Treatment Plan B.

NOTE: DISCUSS WITH YOUR COURSE FACILITATOR ABOUT MEASUREMENT OF STANDARD CUP OF YOUR AREA.

TREATMENT OF OTHER SERIOUS PROBLEMS

Sometimes children with diarrhoea may present with problem other than dehydration like chronic diarrhoea, dysentery (blood and mucus in stool), temperature or undernutrition. Apart from ORT, you should treat these cases according to the nature of the problem. A table is given on the next page showing use of antimicrobials in few specific cases of acute diarrhoea.

Read out the table given in the next page and do the short answer exercise given.

DRUGS USED IN TREATMENT OF SPECIFIC CAUSES OF ACUTE DIARRHOEA

Cause	Drug(s) of Choice:[1]	Alternative:[1]
Severe Cholera[2,3]	Tetracycline Children - 50 mg/kg/day in 4 divided doses x 2 days Adults - 500 mg 4 times a day x 3 days	Furazolidone Children - 5 mg/kg/day in 4 divided doses x 3 days Adults - 100 mg 4 times a day x 3 days Erythromycin[4] Children - 30 mg/kg/day in 3 divided doses x 3 days Adults - 250 mg 4 times a day x 3 days
Shigella dysentery[2,5]	Trimethoprim (TMP) - Sulfamethoxazole (SMX) Children - TMP 10 mg/kg/day and SMX 50 mg/kg/day in 2 divided doses x 5 days Adults - TMP 160 mg and SMX 800 mg twice daily x 5 days - OR - Nalidixic Acid - (should be reserved for severe cases and cases not responding to other drugs) Children - 55 mg/kg/day in 4 divided doses x 5 days Adults - 1 gm 3 times a day x 5 days	Furazolidone Children - 5 mg/kg/day in 4 divided doses x 5 days Adults - 100 mg 4 times daily x 5 days Ampicillin - 100 mg/kg/day in 4 divided doses x 5 days
Acute intestinal amoebiasis[6]	Metronidazole[7] Children - 30 mg/kg/day x 5-10 days Adults - 800 mg 3 times a day x 5-10 days	In very severe cases: Dehydroemetine hydrochloride by deep intramuscular injection, 1-1.5 mg/kg (maximum 90 mg) for up to 5 days depending on response (all ages)
Acute giardiasis[6]	Metronidazole Children - 15 mg/kg/day x 5 days Adults - 200 mg 3 times a day x 5 days	

1 All doses given are for oral administration unless otherwise indicated. If drugs are not available in liquid form for use in young children, it may be necessary to approximate the doses given in this table.

2 Selection of antibiotic for treatment should take into account frequency of resistance to antibiotics in the area.

3 Antibiotic therapy not essential for successful therapy for shortens duration of illness and excretion of organisms in severe cases.

4 Other choices include trimethoprim-sulfamethoxazole.

5 Antibiotic therapy especially required in infants with high fever or severe undernutrition.

6 Requires microscopic examination of stool for diagnosis.

7 Tinidazole and ornidazole can also be used in accordance with the manufacturers' recommendations.

SHORT-ANSWER EXERCISE

A child is brought to you for treatment of diarrhoea. The child is 12 months old and weighs 8 kg. You assess the child and find that he has some dehydration. You also find that he has a fever of 40.5°C and blood and mucus in the stool.

In addition to ORS treatment for his dehydration, what else should be done?

Answer:

In addition to providing ORS solution the case should be treated by antimicrobial agents for dysentery. For example, the patient may be given TMP 80 mg and SMX 400 mg in two divided doses daily with supportive therapy for fever. Health workers should be trained to refer such cases to physician.

EXERCISE F

In this exercise you will read descriptions of 3 different children with diarrhoea. For each child, you will assess the degree of dehydration, select a treatment plan, and describe the treatment you would give.

If you like you can refer to the table 'How to Assess Your Patient' (page 7) as you work.

CASE 1

Samir is 5 months old. His mother is breastfeeding him. His diarrhoea started last night and he has had 8 stools which were very watery. He also vomited. The health worker looks for blood and mucus in the stool but cannot see any.

As the health worker examines Samir, she finds that the skin pinch goes back slowly, the fontanelle is a little sunken, and the eyes are a little sunken. Samir does not have a fever and is not vomiting now. His urine amount is normal.

a. Does the child have signs of dehydration? If yes, describe them.

b. Is he severely dehydrated?

c. Which treatment plan should the health worker select and follow? What fluid should be given?

d. What amount of fluid should be given to the child in the first 4-6 hours?

e. What should be done if the child vomits?

f. When should the child be reassessed?

When the health worker reassesses Samir, she finds that he is still having some diarrhoea. His skin pinch goes back quicker than before, but his eyes and fontanelle are still a little sunken.

g. Describe the treatment to be given now.

After another 4 hours, Samir looks much better. His eyes have filled out, the fontanelle is normal, and the skin pinch goes back quickly though his diarrhoea continues.

h. What should be done next? Why?

CASE 2

Ava is 3 years old and her diarrhoea started 24 hours ago and she has had 3 liquid stools. Her mother took her to the home of the community health worker. As the health worker assesses the child he finds that she looks quite well. Her mouth is wet, her skin when pinched goes back quickly, her eyes look normal, her pulse is normal, and she passes urine normally. However, her mother says she wants to drink a lot.

a. Identify the sign(s) of dehydration which Ava has.

b. What treatment plan should the health worker select and follow?

c. What advice should the mother be given about feeding the child?

d. What should the mother do in the future when the child gets another episode of diarrhoea?

CASE 3

Dinu is 8 months old. He is already weaned. His mother brings him to a community health worker because he has had diarrhoea for a week and it is now worse. (There have been more than 10 liquid stools the day she brings him to the health worker). Dinu has received no food since the diarrhoea started. He is very quiet. He has passed no urine since last night. When he cries there are no tears. The health worker takes the child's temperature and finds that it is 40°C. Dinu has very dry and sunken eyes and a very sunken fontanelle, and a very fast pulse. However, he is conscious and opens his eyes to look at the health worker.

a. What signs of dehydration does Dinu have?

b. Is there <u>some</u> dehydration or <u>severe</u> dehydration?

c. Are there any other serious problems?

The community health worker is not able to provide IV treatment, so he decides to send Dinu with his mother to the health centre.

d. What should he do for Dinu before the child is sent to the health centre (Dinu is able to drink)?

Dinu and his mother arrive at the health centre where IV treatment can be administered. This health centre uses Ringer's Lactate solution. The nurse weighs Dinu and finds he weighs 5 kilos.

e. How much IV fluid should be given to the child the first hour?

Two hundred ml of IV fluid are given to the child within the next 2 hours. His fever is treated according to the customary procedure of the health centre. The child's progress is assessed. The number of stools is decreasing and he has urinated. His eyes and fontanelle are still sunken, his pulse is not as fast, and he is a little more alert.

f. What should the child be given during the next 3 hours? How much should be given?

After 6 hours of therapy, Dinu's fontanelle is a little sunken. His eyes are sunken but not dry and his pulse is normal. He no longer has a high fever.

g. What treatment plan should be selected and followed?

When you have finished this exercise, talk with the Course Facilitator

EXERCISE G

In this exercise you will, if possible, go to a health centre where you will see a health worker assess and treat a child with diarrhoea. There may be a group discussion about the steps the health worker performed to assess and treat the child. During your visit to the health centre, you will, if possible, assess a child with diarrhoea, determine the correct treatment, and treat the child.

- You should take your copy of the **Module** with you to the health centre so you can refer to the assessment table and the treatment plans.

- Write in the space below information which will help you assess and treat children in your own health area. (For example, write reminders or notes which will help you recognize signs of dehydration, administer oral rehydration therapy).

3.0 RECORD DATA ON CHILD

Health workers in the community and in the health facility should keep a record on each patient who comes for a service or treatment.

At a minimum, each child must be identified in the records by:

- Name
- Age
- Date of visit
- Diagnosis (if no diagnosis is made, major complaints can be written)
- Type of treatment or service provided
- Result (for inpatients only)

This information is needed because one should be able to determine each month the number of episodes of diarrhoea treated in children less than 5 years old.

Additional data which may be recorded includes sex, address whether referred to PHC/Hosp. etc.

Review of these records may be done periodically when monitoring actual use of various services and planning future use.

The forms used for patient records may be different in different facilities or areas. What is important about the form is that at least the minimum data is included, and the form is easy to understand and easy to fill out. If existing record-keeping systems in your health area do not include the minimum information, you might want to either modify them to include that information or create new forms. If you can have the same form used by all the health workers you supervise, that will make it easier for you to collect data when you monitor.

EXERCISE H

In this exercise you will draw three types of patient records (proforma) to be maintained respectively at OPD and Indoor of PHC and at Sub-centre.

After you have worked out designing the records 3 sample proformae will be supplied and a group discussion will follow which should include the following points i) importance of maintaining such records, ii) types of activities which can be monitored from these records, iii) feasibility of maintenance of such records at respective levels.

Sample proforma are also given in Annex - 3 (page 71).

REMEMBER THIS

ABOUT TREATMENT OF DIARRHOEA

- The most important problem that must be treated in a patient with diarrhoea is **dehydration.**

- Family members should be educated about managing diarrhoea properly in the home. This can often prevent dehydration from occuring.

- When a child comes to a health worker with diarrhoea, the health worker should:

  - **Ask, Look** and **feel** for signs of dehydration.

  - Select a treatment plan based on the degree of **dehydration.**

  - Give ORS therapy to dehydrated children.

  - Check for serious problems other than diarrhoea, and give appropriate treatment for any serious problems found.

- Use the table How to Asses Your Patient' when assessing and treating children with diarrhoea.

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IMPLEMENTATION OF THE ORT (ORAL REHYDRATION THERAPY) PROGRAMME FOR MANAGEMENT OF DIARRHOEA CASES AT THE BLOCK/COMMUNITY LEVEL.

The knowledge and skill you have gained in the previous chapter will enable you to treat any child with diarrhoea attending PHC. But as a Medical Officer in a block/health area you are also responsible for overall management of all diarrhoeal children in the community. To ensure such provision of treatment to all diarrhoeal children, it is necessary to implement a proper treatment strategy in your health area/block towards effective implementation of ORT programme.

WHAT IS THE TREATMENT STRATEGY FOR MANAGEMENT OF CASES OF DIARRHOEA IN ORT PROGRAMME?

3-Tier approach

Tier	Condition of the child	Who will treat	By what	Where?
I	No dehydration	Mother	'HAF'[1]	Home
II	Some dehydration	MPW, CHG, AWW or other village level workers	'ORS'[2]	Home or Sub-centre
III	Severe dehydration	M.O.	I.V. followed by ORS	P.H.C. or other Hospitals

[1]Home available fluids

[2]Oral rehydration salt solution

In this 3-tier approach mothers will be educated to start 'Home Available Fluids' as soon as diarrhoea starts. At this stage if a mother brings the child to a health worker, he will examine the child and if there is no dehydration, the mother will be advised 'HAF'. She will also be asked to report for ORS if dehydration develops. Such advice might be risky unless FREE village-based service to provide ORS treatment is ensured for cases who develop dehydration. Treatment by ORS can be done at SC or home by a village based worker who may be a multipurpose worker, CHG, AWW or any other Voluntary Worker, provided they are trained properly, supervised and supplied with ORS. All children who develop severe dehydration with or without any early treatment will be admitted in PHC and treated by Medical Officer only.

Hence to ensure the treatment strategy stated, activities to be carried out are given below:

ACTIVITIES FOR SUCCESSFUL IMPLEMENTATION OF THE 'ORT' PROGRAMME:

To ensure management of each cases of diarrhoea at the appropriate level the following 4 activities are required -

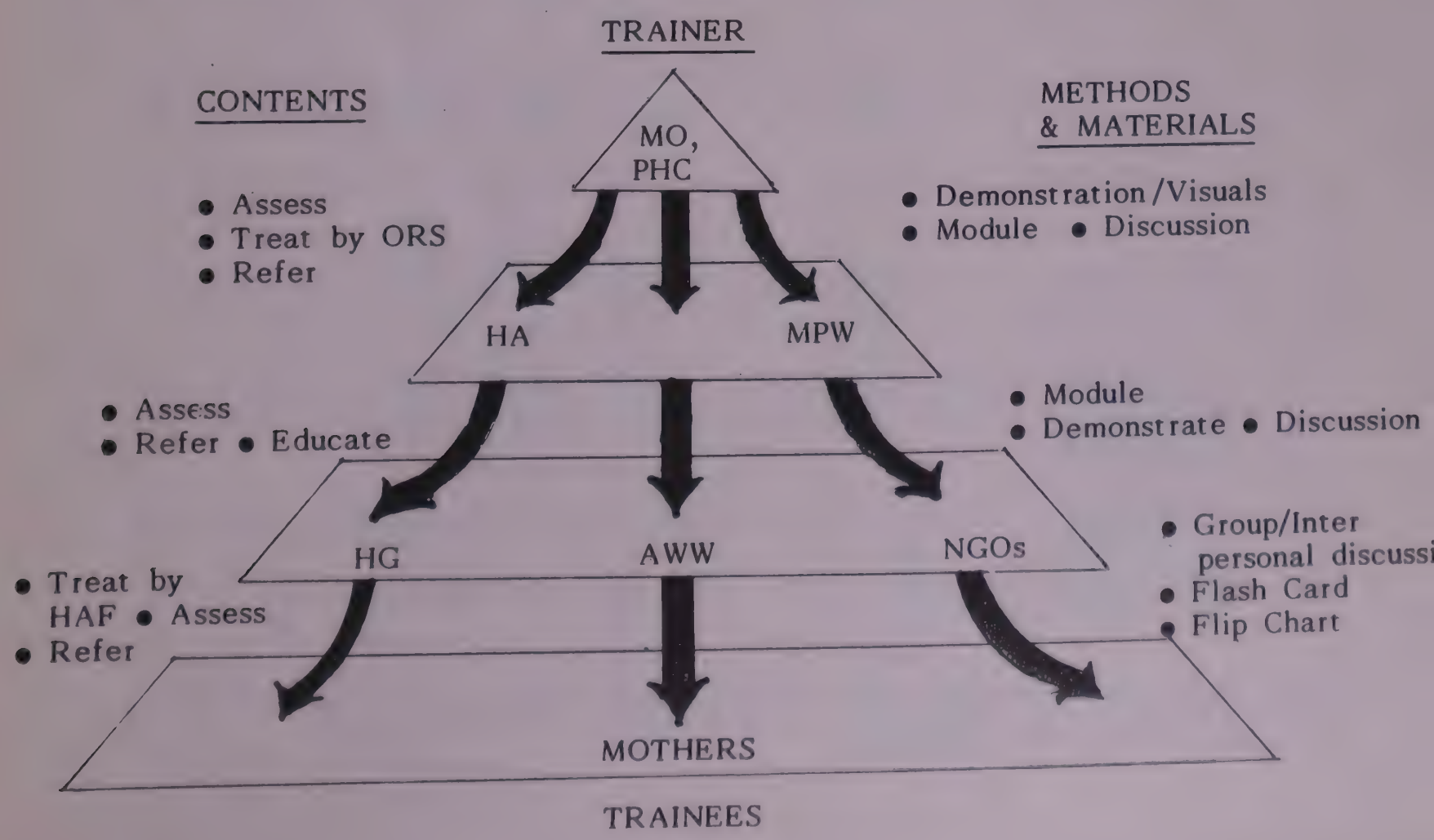
1) Training of Workers
2) Education of Mothers
3) Supply of ORS
4) Monitoring and Supervision

A detailed list of activities of a MO, PHC has been given in Annex 2 (Page 69).

TRAINING AND EDUCATION:

The fact that 99% of the cases of diarrhoea are proposed to be treated by trained personnel and mothers themselves (refer to discussion above and page 4 of this module) training of paramedical workers and education to mothers have a tremendous impact in the whole programme of ORT. Each level of Health Personnel (MO to MPW) has to play role of trainer till village based ORT services are ensured and mothers are educated.

The channel of communications are presented below in a schematic diagram.



.0 TRAINING OF PARAMEDICAL WORKERS

To ensure training one must know

1. How the trainee is going to utilise this education?
2. Who will train?
3. Who are the trainees?
4. What should be the method of training? Is the trainer well conversant with training methods?
5. Are the training materials prepared and prearranged?
6. Is the time adequate for each training session?
7. Is the place alright for training?

The most important point is planning of the training programme. The content of training will depend upon point No. 1,2 & 3 above, whereas point No. 4,5 & 6 are very important for successful conduction of training.

A FEW PRINCIPLES OF TRAINING ARE GIVEN BELOW:

- The best method of training is to help the learners learn by doing and help them solving problems.

- Training for seperate category of workers (HA, MPW, CHG, AWW etc.) must be conducted seperately as they have to acquire seperate levels of skill (which will depend upon their activity predefined for a particular programme e.g. ORT programme).

- Trainer must be well aware of the level of knowledge of the trainees, their tasks, the content and method of training. Preferably the trainer should be a person whom the trainees respect (e.g. HAs should be trained by M.Os.)

- Method of training must encourage the trainee to interact, think, solve problems. There should be more exercises and demonstrations than lectures.
  (e.g. to demonstrate dehydration, patients can be shown to the trainees)

- Time should be sufficient for each trainee for practical exercises, demonstrations.

- Training should be conducted in small groups where each trainee should get sufficient attention from his trainer (not more than 6-7 for a module).

- Training must not be one time phenomenon and preferably be repeated.

- On the job supervision, monitoring the performance of the worker can help him learn more.

Based on the above questions and principles stated above a list of possibilities have been given on next page.

TRAINING ACTIVITIES

ACTIVITY	LEVEL OF SKILL	TRAINER	TRAINEE	PLACE OF TRAINING	TRAINING METHOD	MATERIAL
Management of cases with no dehydration	Know 3 rules for home treatment of diarrhoea - identify dehydration for when to refer	MPWs (M)/(F) supervised and monitored by HA & MO	- Mothers at community - Mother at SC/PHC	- Village where small groups can gather - S.C./P.H.C.	- Group meeting - Interpersonal communication	Flash card, Flip Chart (if available)
Management of cases with some dehydration (+ as in above)	- assess degree of dehydration - treat with ORS - refer cases to PHC	MO, PHC & BEE, HS	- HA(M)/(F) - MPW(M)/(F)	- PHC - SC	Demonstration, Lecture, Problem solving exercises.	Cases, ORS Diagram, Chart, Module
Management of cases with severe dehydration (+ as in above)	- assess degree of dehydration - treat with I.V. & ORS	Dy. CMOH DIO DPHN RHFWTC	- MO BEE Compounder	- District Head Quarter	"	"

MPW : Multipurpose Worker
M/F : Male/Female
HA : Health Assistant
MO : Medical Officer
PHC : Primary Health Centre
SC : Sub-Centre
HS : Health Supervisor
BEE : Block Extension Educator

Dy. CMOH : Deputy Chief Medical Officer of Health
DIO : District Immunization Officer
DPHN : District Public Health Nurse
RHFWTC : Regional Health & Family Welfare Training Centre

EXERCISE - I

In this exercise you will draw a plan for training of paramedical worker for your health area/block. This will vary from place to place. For example, to extend the training to village level worker one can think of CHGs if their performance are satisfactory. Instead one can think of seperate volunteers other than CHG/AWWs depending upon the situation. Initially in this exercise you can write each item seperately like category of trainee - HA, MPW, CHG, AWW, Volunteers from each village etc., their numbers, till all the points are covered.

Finally, you should try to summarise the whole schedule in the tabular form in the next page. Even if you don't have exact figures draw a tentative plan.

Once you have finished, discuss with your Course Facilitator about the technical side of your plan. If the administrators for your area (e.g. Dy. CMOH/CMOH) are present in the course, try to finalise administrative issues regarding the courses to be conducted.

DRAW A PLAN FOR EACH CATEGORY OF TRAINEES FOR YOUR BLOCK ON THE FOLLOWING PAGE.

DRAW A PLAN FOR EACH CATEGORY OF TRAINEES FOR YOUR BLOCK

1.	Category of trainee				
2.	No. of trainees				
3.	Trainer(s) for the above category				
4.	Method of training				
5.	No. of student in each session				
6.	Teaching materials required (in details e.g. No. of chairs, pencils, ORS pkts. containers, cases)				
7.	Place of training				
8.	Time required for: - Preparation - Training Session				
9.	Expenditure				

Write a time schedule with target dates how you propose to implement the plan you have drawn on previous page.

5.0 PLAN AND SUPERVISE EDUCATIONAL PROGRAMME FOR MOTHERS:

In the last exercise you have decided who will be the village based workers for your area. Like any learner mothers will also learn better from their own experience. So village level workers must be trained well on how to communicate to mothers whenever a patient is brought to them for treatment of diarrhoea. Such interpersonal communication is probably the best method of education and must be carried out even when there is no diarrhoea of the child. For example, it can even be done when the child has been brought for immunisation or during home visit of health workers for other purposes.

Apart from these efforts, small group meetings, should also be conducted in each village by MPWs, under the supervision of HA.

EXERCISE - J

In this exercise one of the trainees will play the role of village based health worker. Another trainee should play the role of a mother who has come for treatment of his diarrhoeal child (without dehydration) to the health worker. The village worker will try to educate the mother about home treatment of diarrhoea. A group discussion will follow .

6.0 SUPPLY OF ORS

Without supply of adequate number of ORS packets at proper intervals the whole programme is bound to fail. Further, the effect of training and education will wither away if those trainings are not utilised and practised due to lack of 'ORS' supply.

EXERCISE K

FOR SUPPLY OF O.R.S. PACKETS :

6.1 Calculate demand for whole block for one year (you can refer to pages 4 & 29) .

6.2 What are distribution channels for your block? (This should also include the suggestion you have made for village level worker in the exercise of training on page 58 apart from regular health workers like MPW etc.)

6.3 Who is the staff under your control whom you can entrust with regular distribution of ORS from PHC?

6.4 What is the lag time between supply of ORS from Head Quarter and placing the demand for your area?

6.5 At what intervals the demand for ORS be placed at Head Quarter?

6.6 What will be the interval for ORS distribution to MPW/HA?

6.7 How do you instruct your health worker to store ORS in a Sub-centre?

0 SUPERVISION AND MONITORING

Some work or occassional more work or no work is harmful for the programme. What is needed is **optimum** work that should be ensured by monitoring and supervision.

MONITORING:

The objective of monitoring is to keep an eye on how the activities are going on. Any problem will thus be brought out and tackled immediately. For this, **major activities** at each level with **check list** for monitoring are given below:

Major activities at PHC level for this programme are:

1. Treatment of cases at PHC.
2. Training of paramedical staff.
3. Maintaining supply of ORS.
4. Keeping of records for cases, trainings, educational campaigns held and ORS supply.

Monitoring checklist at PHC level:

For treatment of cases

- Ensure the treatment of moderately and severely dehydrated cases.
- Check the stock of I.V. Ringer lactate solution and ORS packets.
- Check the records being maintained.
- Check the number of cases of some dehydration and severe dehydration treated.

For training

- Check whether an overall plan exists to implement the training programme upto village level.
- Check the No. of workers at each category trained as planned.
- Observe whether method of training are being correctly followed.

For ORS supply

- Check the stock register being maintained properly.
- Check that orders are being placed at proper interval.

For Record

- Check quality of record.
- Find out the villages where from the cases of no dehydration, some dehydration coming to PHC without treatment at village levels.
- Find out the No. of cases treated by ORS, referred and deaths.

Activities at Sub-centre level:

- A health worker should organize educational campaigns for mothers.
- Treat cases of some dehydration and refer severe cases of dehydrations properly.
- Store ORS properly.

Monitoring checklist at Sub-centre level:

by asking
- whether the worker can assess the state of dehydration
- whether he can choose the correct treatment plan

by observing
- whether he can prepare ORS properly and
- whether he advises mother properly.

by checking
- whether register is being maintained
- whether ORS packets are stored properly
- Amount of ORS stored.
- Time interval between consecutive supply of ORS.
- No. of health educational campaigns made in each village.

Activities at village level:

- Mother should be educated by village level worker about home management of diarrhoea.
- Mother should be able to manage cases with no dehydration at home.
- Mother should identify early signs of dehydration to take the case to the village worker.
- Cases of diarrhoea should be assessed properly by village level workers who should be able to choose correct treatment plan.
- Health worker should have enough supply of ORS packets, store it properly and treat diarrhoea with some dehydration by it.

Monitoring checklist at village level:

For village based health worker

by checking	-	whether the village has a trained health worker.
by asking	-	whether a health worker can recognise cases of some dehydration and treat them
	-	whether he knows when to refer a case.
by observing	-	a health worker giving advice to mother of a diarrhoeal child
	-	a health worker prepaering ORS
	-	stock of ORS packets maintained by the worker.

For mother

by asking	-	what a mother exactly did during last episode of her child's diaerrhoea
	-	does she recognise ORS packet and know its use.
	-	does she know when to go to health worker for treating her diarrhoeal child.

SUPERVISION:

By supervising the jobs of your worker you will be able to support them in carrying out tasks entrusted to them.

So you should supervise the workers in activities like **training, educating the mother, supply of ORS and treatment of cases.** Supervision should be carried out intensively during initial phase of implementation of the programme when workers will require much guidance for acquiring the skills properly. Since, the skills deteriorate with passage of time, time to time supervision of the jobs should also be carried out. A few examples have been given below :

For Training:

Supervise while a worker plans

- he has chalked out a schedule of training programme.
- arrangement for a training session have been made well ahead of time.

Supervise during a training session

- the trainer is going through the module stepwise.
- trainees can properly understand him.
- proper arrangements have been made for demonstration of cases of dehydration.

For education of mother:

Supervise educational campaign like group meetings in a village
Check that

- dates of meeting are not repeatedly changed.
- village opinion leaders are well intimated
- during a meeting, everybody can listen to the worker and messages are clearly expressed.
- questions from mothers are encouraged and properly answered.

For supply of ORS:

Supervise the worker you have entrusted with the job of arranging ORS supply

Check that

- the worker can calculate the demand properly - both for the village level workers and PHC as a whole.
- he places the demand timely and receives supply accordingly.

For treatment of cases:

Supervise the worker while he treats a case

Check that

- the worker follows all the steps to 'ask' 'look' & 'feel' while examining a case.
- he interprets the signs correctly.
- he advises correct dose and frequency of 'HAF' or 'ORS'.
- he delivers ORS in prepared form.
- he asks the mother to repeat the advice in her own language to ensure that the mother has understood it.
- he enters the record of cases properly.

ANNEX 1

PREVENTION OF DIARRHOEA

An important job of the health worker is to help prevent diarrhoea by teaching the people some simple facts about:

- Food and feeding children
- Water
- Hygiene
- Immunisation

- FOOD AND FEEDING CHILDREN

The table, "Feeding Children" on the following page summarizes many of the points listed below:

- Breastfeeding, whenever the baby wants, is very important in the first 4 to 6 months of life. Breastmilk is the best food for babies of this age and helps to prevent and stop infections, including diarrhoea. Breastfeeding should continue for at least 2 years.

- When breastfeeding is not possible and other milk formulae must be given, it is better to give them with a cup and spoon rather than a bottle. Feeding babies milk from bottles is not good because it is hard to keep the bottles clean.

- It is important that mothers know that they should eat more food than normal during pregnancy and when they are breastfeeding.

- At 4 to 6 months all babies should start to have other foods. Soft, mashed foods are best.

- All food should be fresh and prepared in a clean place using clean pots and utensils.

- Cooked food should be eaten while still hot or well heated again before eating.

- Uncooked food should be washed well in clean water before eating.

Feeding Children[1]

Child's Age	Breastfeeding	Other Foods
Birth	Start at birth. Feed whenever the baby wants	None, unless not enough breast milk
4 months	Continue	Add at least 2 other soft, mashed foods like*Dalia, Suji, Banana, egg, pulse etc. two times a day
6 months	Continue	Add other foods like* Khichri, Potato four times a day
One year or older	Continue up to at least 2 years of age	All foods 4 to 6 times a day

*These foods should be "energy rich". Most staple foods (such as cereals, roots, tubers, stems) do not contain enough energy per unit weight for infants and young children. Where possible, some oils, fats, or sugars should be added. The diet should be varied with addition of legumes, animal foods, fresh fruits, and leafy green vegetables. The foods should be locally available, acceptable and within the reach of the common people.

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[1] Adapted from "Guidelines for Nutrition Training of Primary Health Care Workers and Other Community Workers", WHO document NUT/80.2 (1980).

- WATER

  - Drinking water should be taken from the cleanest possible source. Unless you are sure that the water is safe, it should be boiled before drinking. This water should be kept in a clean, covered container and used only for drinking.

  - Washing of the body, clothes, or pots and utensils should not be done at the source of drinking water.

  - Stools and urine should not be passed in or near the source of drinking water.

- HYGIENE

Hygiene concerns activities to stop germs from getting into the body. These activities involve the village, the household, and each persons. The health worker should discuss the points listed below with all members of the village. He should learn from them the local beliefs about diarrhoea, and encourage those that are helpful and explain why some local practices are harmful.

  - The messages in the previous sections about food preparation and water are also about HYGIENE.

  - Dirt, rubbish, stools, and urine contain germs which cause infections, including diarrhoea.

  - Stools and urine should be passed in a latrine. If there is a latrine, it should be kept clean. If there is no latrine, they should be passed in one place away from the village and away from the source of drinking water. Stools passed by children near the house should be taken away or buried.

  - Hands should **always** be washed well after passing stools and before preparing food, eating, or feeding children. Children's hands should be washed too. If possible, soap should be used each time.

  - Rubbish should be burned, buried, or taken to a place far away from the village and away from the source of drinking water.

  - Flies carry germs from dirt, rubbish, and stools into the house and onto food. Flies should be kept away from stools (by burying stools), from latrines (by keeping them clean), from rubbish (by burning or burying), and from food (by keeping it covered).

- IMMUNISATION

Measles almost invariably attacks every child and may cause severe illness producing diarrhoea and undernutrition. So immunising child against measles is very important step towards prevention of diarrhoea. The measles vaccine is usually given at 9 months of age of a child.

ANNEX - 2

LIST OF ACTIVITIES OF MEDICAL OFFICER OF HEALTH, PRIMARY HEALTH CENTRE FOR ORT PROGRAMME

1. Management of cases at PHC

1.1 Treatment of all cases of diarrhoea in O.P.D.

1.2 Motivate mothers to get treatment from local health worker/MPW.

1.3 Treat referred/admitted cases.

1.4 Maintain record of all diarrhoea cases in respective O.P.D. register and treatment chart (indoor patients)

(Proforma, monthly report attached Annex-3)

1.5 Implement village based ORT programme for all under-five diarrhoea cases in the area, which he will achieve by by training paramedical workers, ensuring supply of ORS and monitoring and supervising their work.

2. Train paramedical staff in the block

2.1 List total number of staffs of different category

2.2 Decide who will train at what level

2.3 Conduct the training programme for Health Assistant (H.A.) which provides appropriate skills for management of cases as well as training of MPWs.

2.4 Implement training programme for MPWs (which he will accomplish by planning and supervision) with the help of HA, which provides appropriate skills for management of cases as well as health education of the mothers in the community.

3. Educate mother in the community

3.1 Ensure skill among H.A. and MPW about contents and methodology for education to mother

3.2 Supervise and monitor educational campaigns through monthly reports, spot checking, field visit, meeting with workers.

4. Ensure supply of ORS

4.1 Calculate requirements of ORS packets required for the block

4.2 Decide the role of each category of personnel, in treatment of diarrhoea with ORS

4.3 Calculate requirement of ORS for each worker/treatment agency

4.4 Decide time interval at which ORS will be supplied to the workers/ agencies

4.5 Maintain records for supply, distribution, utilisation of ORS (Proforma attached, Annex-3)

5. Monitor the programme

5.1 Maintain records for O.P.D. and indoor patients

5.2 Maintain records for O.R.S.

5.3 Analyse record submitted by MPW and compiled by HA to find out

i) No. of diarrhoea cases brought under treatment by health workers (HAF + ORS + REFERRAL)

ii) No. of ORS packets used

iii) No. of benificiaries received ORS

iv) No. of training given

v) No. and type of educational campaign carried out.

vi) No. of diarrhoea associated deaths.

vii) No. of cases attending O.P.D. with types of dehydration.

ANNEX - 3

Date	Sl. No.	N a m e	Age	Sex	Address	Diagnosis (if with diarrhoea write A/B/C for dehydration)	Treatment (If diarrhoea write plan of treat A/B/C)	Result (Cured/ Death)

A page from a register of PHC - INDOOR.

Date	Sl. No.	N a m e	Age	Sex	Address	Diagnosis (if with diarrhoea write A/B/C for dehydration)	Treatment (if diarrhoea write plan of treat A/B/C)

A page from a O.P.D. register of PHC/S.C.

Instruction:
Under column 'diagnosis' enter "A" for no dehydration, "B" for some dehydration and "C" for severe dehydration
Under column 'treatment' enter "A" for HAF, "B" for ORS, "C" for IV + ORS. For subcentres, "C" will indicate referral to PHC.

ANNEX - 3

MONTHLY REPORT FROM PHC/SC* FOR DIARRHOEA CASES
(for < 5 children only)

Name of PHC/SC*: For the month:

ITEMS	SC	PHC	TOTAL
1. No. of reporting centres		1	
2. Total No. of diarrhoea cases attended			
3. Total No. of diarrboea cases treated by ORS			
4. Total No. of ORS packets used			
5. Total No. of diarrhoea cases referred to PHC			
6. Total No. of diarrhoea cases referred to Hospital			
7. Total No. of diarrhoea cases advised 'HAF'			
3. Total No. of diarrhoea cases admitted (for PHC only)	-		
Treated by a) Only ORS	-		
b) Only I.V.	-		
c) I.V. + ORS	-		
9. No. of deaths associated with diarrhoea			

Signature : Date:

Name :

Designation: Place:

* Strike out which is not applicable.

LIST OF FIGURES AND THEIR SOURCES

Figure		Source	Page
1.	Salt and water	DAVID MORLEY & HERMIONE LOVEL : My name is today	2
2.	Concept of pitcher	NICED, Calcutta	2
3.	Treating diarrhoea (modified)	W.H.O.: Module on 'Treatment of Diarrhoea'	3
4.	Management of 100 cases of Diarrhoea in the Community (modified)	DAVID MORLEY & HERMIONE LOVEL (ibid)	4
5.	Signs of dehydration	W.H.O: Module (ibid)	17-19
6.	Continue breast feeding	NICED, Calcutta	21
7.	Continue feeding (modified)	W.H.O.: Module (ibid)	21
8.	Increase fluids (modified)	W.H.O.: "Example of Health Education Material" - Diarrhoeal Disease Control	22
9.	Watch for signs of dehydration (modified)	W.H.O. : Module (ibid)	22
10.	Rehydrate the child	W.H.O. : Example of Health Education Material (ibid)	27
11.	ORS Packet	NICED, Calcutta	28
12.	Preparation of ORS Solution	W.H.O. : Module (ibid)	29

DEFINITIONS OF TERMS

Acute Diarrhoea	-	3 or more abnormally loose or watery stools per day for less than 3 weeks. Acute diarrhoea is caused by an infection of the bowel.
Antimicrobials	-	Drugs that kill microorganisms or stop their growth.
Axillary temperature	-	Temperature taken in the armpit.
Chronic diarrhoea	-	3 or more abnormally loose or watery stools per day for more than 3 weeks. Chronic diarrhoea is caused by an infection of the bowel, by undernutrition, or by worms and other parasites.
Dehydration	-	Loss of a large amount of water and salt from the body.
Dysentery	-	A type of acute diarrhoea which has blood and mucus in the stool and a high fever.
Fits	-	Sudden, unusual, uncontrolled muscular movements which can occur in the head, neck, chest, arms, or legs.
Fontanelle	-	The soft spot on top of the head of a child until the age of about 12 months.
Radial Pulse	-	Pulse which is felt on the outer or thumb side of the wrist.
Register	-	A book or list which contains the daily record of events. A register in a health facility may contain dates, names, ages, and services provided.
Rehydration	-	The replacement of water and salts that have been lost from the body.
Unconscious	-	A condition where a person is not awake or aware, and cannot be aroused or awoken.

[Partially adopted from the module **"Treatment of Diarrhoea"** of the Supervisory Skills Course by the World Health Organization, Programme for Control of Diarrhoeal Diseases]